REMARKS

Claims 1, 3-7 and 9 -16 are pending. Claim 1 has, in particular, been amended to clarify that the “other computer nodes” is a “plurality of other computer nodes”. Corresponding similar amendments have been made to claims 7 and 10 to ensure consistency between the independent claims. No new matter is being added and all amendments have been made for clarity purposes.

In numbered paragraphs 1 and 2 on page 2 of the Office Action, Claims 1, 3-7, and 9-16 are rejected under U.S.C. 103(a) as being unpatentable over US patent no. 7,058,729 (hereinafter referred to as “Le Scolan”) in view of US patent no. 5,276,659 (hereinafter referred to as “Kotaki”).

As mentioned in Applicant’s previous Amendment, Le Scolan relates to a method of synchronizing between two networks (Col. 1, lines 8-9). In particular, Le Scolan is concerned with solving problems associated with the synchronization of two IEEE 1394-1995 buses via a radio frequency signal (col. 3, lines 43-54, col. 4, lines 30-52, and Figure 2). Le Scolan teaches the synchronization of two buses (networks) to be carried out in the following manner.

Col. 13, line 1-col. 14, line 15 (and Figures 5a and 5b) explains that a first interconnection node, A, of a first network measures a time difference by an associated first network cycle master between two frames in the first network and sends the measured value inside a frame, which a second interconnection node, B, of a second network is able to receive via a radio frequency signal. At the second interconnection node, B, the second interconnection node, B, makes the same measurement based on the received radio frequency signal (col. 14, lines 19-55) and calculates the difference between the time measurement performed by the first interconnection node, A, and the second interconnection node, B (col. 15, lines 18-31). The result is the clock difference between the first and second interconnection nodes A and B. Based upon the assumption that the first interconnection node A is synchronized to the first network cycle master of the first network and the second interconnection node, B, is synchronized to an associated network cycle master for the second network, the result characterizes a frequency difference (col. 15, lines 33-36).

Since the first and second networks described in Le Scolan have respective network cycle masters, for each network a single node dictates the timing in the network. Consequently, adjustment of the timing of the second network so as to be in synchronism with the first network is simply a matter of adjusting the network cycle master of the second network. All other nodes in the second network **then follow** the timing dictated by the network cycle master (col. 15, lines 45-48).

Turning to Kotaki, this document relates to a clock synchronization system for a network (col. 1, lines 8-9). A "network station" as shown in FIG. 1 comprises a plurality of workstations 11o, ..., 11i, ... connected in a loop-like transmission path 10 to provide a network structure (col. 2, lines 56-59). One workstation, in the example provided workstation 11o, constitutes a master station and the other workstations 11b, ..., 11i, ... constitute slave stations (col. 2, lines 59-62). The network structure is a single and solitary network structure.

According to col. 2, lines 63-68, the stations 11o, ..., 11i, ... have internal clocks to measure time and the internal clock of the master station 11o is set to be a reference time and the slave stations 11b, ..., 11i, ... synchronize to the reference time.

In respect of a given slave station, the master station 11o receives a "text format" (presumably a text message of some description) at an optimal or predetermined time and the master station performs a procedure to obtain time correction data from the information received (col. 3, lines 1-4). Kotaki also explains that the "text format" comprises header information and present time information associated with the slave station sending the "text format" (col. 3, lines 4-7).

The master station 11o finds a time difference between its own reference time and a time Ti associated with the slave station 11i and determines whether the modulus or absolute value $|e|$ of the time difference is smaller than a predetermined allowance time, α (col. 3, lines 8-12). When the modulus of the time difference $|e|$ is not within the allowance α, the master station 11o sets a time correction number N representing the number of times time correction is to be made and also divides the allowance time α or the time difference $|e|$ by the time correction number N in order to obtain a time correction coefficient, D (col. 3, lines 20-26). Following some evaluations in relation to the time correction coefficient D (col. 3, lines 26-28), when the time correction coefficient D is less than a target correction value β, the master station transmits another "text format" to the slave station 11i, the "text format"

comprising header information, the internal timer's time correction coefficient, D (obtained by an operation, sign (e)*D→D, and the internal timer's time correction number N (col. 3, lines 39-47).

Turning to col. 3, line 55 – col. 4, line 3, each slave station comprises an internal timer 20 that comprises a clock generator 21 and frequency divider 22 (FIG. 2) adapted to generate a clock timer check signal for updating its own internal timer time. The slave station also includes a correction coefficient memory 23 for storing the time correction coefficient D from the master station 11o, and a time correction calculation circuit 24 responsive to the timer check signal generated by the internal timer 20 in order to generate a correction timer check signal, F. In this regard, an equation [F·(1±D) → F] is used to determine the correction timer check signal, F, using the time correction coefficient D. According to col. 4, lines 4-8, the time correction circuit 24 continues the correction operation until there is a coincidence between a time corrections number N received from the master station 11o and an actual time correction number generated by the time correction circuit 24.

The operation is summarized at col. 4, lines 11-22.

Clearly, Kotaki <u>does not describe the master station sending the time difference |e| to the slave station</u>, only the time correction coefficient, which clearly is not the same as the time difference. Additionally, it is undoubtedly clear that the <u>master station processes timing errors for each slave station individually</u>, as is evidenced by the "text formats" having headers and the description in Kotaki of messages being sent from the master station to an individual slave station, <u>as opposed to broadcasting</u> the message to all the slave stations on the network.

Referring to claim 1, claim 1 recites a computer node for operating in a system comprising a plurality of network clusters, wherein a number of network clusters comprise a plurality of computer nodes. Claim 1 recites that the computer node comprises:

- a synchronization unit for comparing network timing information for a first network with network timing information for a second network and
- for communicating to a plurality of other computer nodes in the first network a sign of the difference between the first network timing information and the second network timing information

- to allow the plurality of other computer nodes in the first network to alter their network timing information directed by the sign of the difference
- wherein a network timing difference between the first network and the second network is thereby reduced responsive to the sign of the difference received and in sufficiently small predetermined step values in accordance with the sign to avoid loss of local synchronization with the plurality of other computer nodes in the first network cluster.

It is submitted that the combination of Le Scolan and Kotaki fails to teach that the synchronization unit is capable of communicating to a plurality of other computer nodes in the first network a sign of the difference between the first network timing information and the second network timing information to allow the plurality of other computer nodes in the first network to alter their network timing information directed by the sign of the difference, and the network timing difference with the first network and the second network is thereby reduced responsive to the sign of the difference received and in sufficiently small predetermined step values in accordance with the sign, as recited in claim 1.

In this respect, it is submitted that Kotaki does respond to a sign of a difference received, but to a time correction coefficient; this is not quite the same. IN any event, as explained above, the node of Le Scolan does not send signs of differences to a plurality of other nodes, it sends timing-related data to a cycle master. Hence, local processing of this data as a result of communication of a sign of a difference from one cycle master in one network directly to nodes in another network is not contemplated by Le Scolan. Indeed, even the master station of Kotaki similarly does not send the timing-related data to a plurality of the other slave stations. Instead, the “text format” is sent to a specifically addressed slave station, as evidenced by the use of headers.

Consequently, if the skilled person were to follow the methodology of Le Scolan, the time correction coefficient D would be sent to a cycle master, not to the plurality of other nodes in the network. If one were to suggest that Le Scolan communicates the same timing-related data to all “slave” nodes in the network, this would contradict the teachings of Kotaki, because Kotaki requires nodes to be individually addressed in this respect as for the network of Kotaki, Kotaki recognizes

that each slave station has its own timing error. Hence, the teachings of Kotaki are technically incompatible with those of Le Scolan.

In view of the reasoning provided above, Applicant submits that the combination of Le Scolan and Kotaki does not render claim 1 obvious.

Claims 3-6, 11 and 12 depend from claim 1. By virtue of this dependence, claims 3-6, 11 and 12 are also not obvious.

Claim 7 is directed to a system comprising a plurality of network clusters and corresponds to the computer node of claim 1. Consequently, the arguments set forth above in support of claim 1 apply equally to claim 7. As such, it is therefore respectfully submitted that the combination of Le Scolan and Kotaki fails to teach that the synchronization unit is capable of communicating to <u>a plurality of other computer nodes</u> in the first network a sign of the difference between the first network timing information and the second network timing information such that a network timing difference between the first network and the second network is <u>thereby</u> reduced by <u>the plurality of other computer</u> nodes in the first network responsive to the sign of the difference received, and in sufficiently small predetermined step values in accordance with the sign, as recited in claim 7.

In view of the reasoning provided above, Applicant submits that the combination of Le Scolan and Kotaki does not render claim 7 obvious.

Claims 9, 13 and 14 depend from claim 7. By virtue of this dependence, claims 9, 13 and 14 are also not obvious.

Claim 10 is directed to a method of allowing synchronization of a first network and a second network and corresponds to the computer node of claim 1. Consequently, the arguments set forth above in support of claim 1 apply equally to claim 10. As such, it is therefore respectfully submitted that the combination of Le Scolan and Kotaki fails to teach communication <u>to a plurality of other computer nodes</u> in the first network a sign of the difference between first network timing information and second network timing information, the network timing difference between the first network and the second network is <u>thereby</u> reduced by <u>the plurality of other computer nodes</u> in the first network responsive to the sign of the difference received and in sufficiently small predetermined step values in accordance with the sign, the reduction of the timing difference being directed by the sign, as recited in claim 10.

In view of the reasoning provided above, Applicant submits that Le Scolan does not anticipate claim 10.

Claims 15 and 16 depend from claim 10. By virtue of this dependence, claims 15 and 16 are also not obvious.

The case is believed to be in condition for allowance and notice to such effect is respectfully requested. If there is any issue that may be resolved, the Examiner is respectfully requested to telephone the undersigned.

If Applicant has overlooked any additional fees, or if any overpayment has been made, the Commissioner is hereby authorized to credit or debit Deposit Account 503079, Freescale Semiconductor, Inc.

Respectfully submitted,

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